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Intergenerational Education Mobility Among the Children of Canadian Immigrants

by Abdurrahman Aydemir, Wen-Hao Chen and Miles Corak

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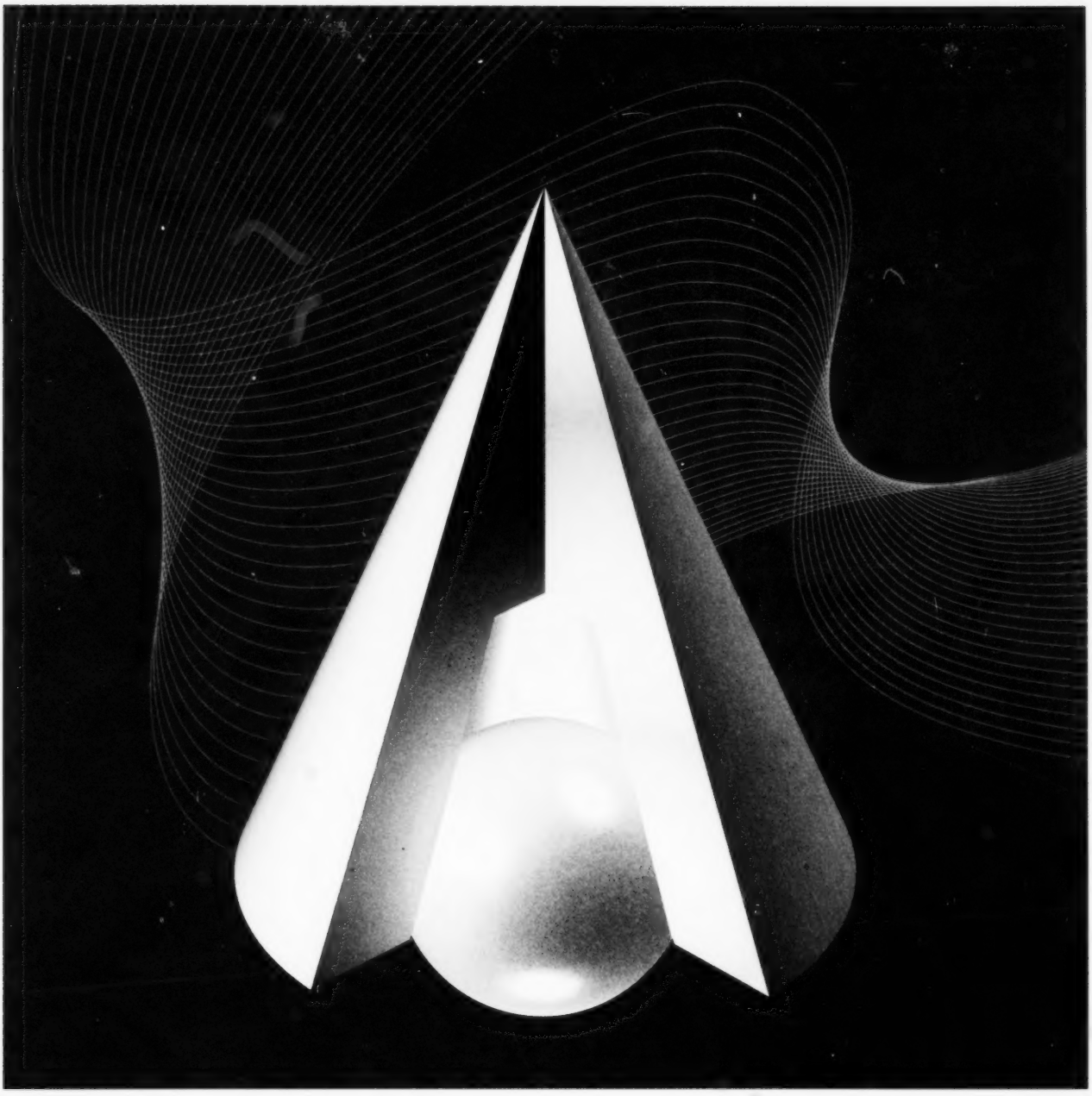

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Abstract

We analyse the intergenerational education mobility of Canadian men and women born to immigrants. A detailed portrait of Canadians is offered, as are estimates of the degree of intergenerational mobility among the children of immigrants. Persistence in the years of schooling across the generations is rather weak between immigrants and their Canadian-born children, and one third as strong as for the general population. Parental earnings are not correlated with years of schooling for second-generation children and, if anything, are negatively correlated. Finally, we find that the intergenerational transmission of education has not changed across the birth cohorts of the post-war period.

Keywords: immigrants, education, intergenerational mobility

JEL classification: F22, I20, J62.

Executive summary

The objective of this research is to focus on the education outcomes of the children of immigrants. We ask three questions. First, what is the degree of intergenerational education mobility, and is it different among immigrants and their children? Second, what factors are most tightly related to the schooling outcomes of second generation Canadians, parental earnings or parental education? And third, has the strength of the tie between the education of immigrant parents and their Canadian-born children changed over time?

We answer these questions by employing the regression to the mean model to measure mobility in education across the generations. This is done in two separate ways: (1) by indirectly using a grouped estimator from the censuses with which immigrant fathers are drawn from the 1981 Census and their potential second-generation children are drawn from the 2001 Census, and (2) by directly using self-reported information on parental education from the Ethnic Diversity Survey.

The main findings are summarized as follows. First, we find that persistence in the years of schooling across the generations is rather weak between immigrants and their Canadian-born children: only about a third as strong as for the Canadian-born children of Canadian-born parents. Second, money has little to do with this intergenerational tie, indeed if anything, lower earning immigrant parents have more educated children. Finally, the strength of the tie between parent and child years of schooling has not changed across the birth cohorts of the post-war era.

Nevertheless, a few caveats are offered when interpreting the results. First, our analysis cannot and is not intended to uncover or outline the reasons for these patterns. Second, we also underscore the fact that our descriptive results are global, referring to societal averages. Indeed, there are a few areas that may require further analyses. One particular case is that immigrant fathers come to the country with greater than average education, yet earn less than average; these fathers then witness a similar scenario occurring for their children. Moreover, the analysis is historical in nature, referring to cohorts of immigrants who arrived in the country some decades in the past, and whose children attended school in the past. Unclear is the extent to which the patterns we uncover, and the particular groups we highlight, can be extrapolated into the future.

1 Introduction

The schooling of immigrant children is often cited as an important outcome related to their capacities to succeed in the labour market. The objective of our research is to inform this discussion by focusing on the education outcomes of the children of immigrants. The analysis is based upon the Canadian experience. Our frame of reference is a growing literature on intergenerational mobility of earnings and education that has come to complement the large number of studies on the social and economic position of immigrants. This literature examines the strength of the tie between the situation of immigrants and the adult outcomes of their children, the so-called 'second generation.' For example, Borjas (1992, 1993), Card, DiNardo and Estes (2000) and Card (2005) examine both the education and earnings outcomes of the children of immigrants born in the United States, and in particular on how well they do relative both to their parents and to children whose parents were also born in the United States. Similar issues have also been studied in Europe including, among others: Van Ours and Veenman (2003) for the Netherlands; Hammarstedt and Palme (2006), Osterberg (2000), Rooth and Ekberg (2003) for Sweden; Nielson et al. (2003) for Denmark; Bauer and Riphahn (2007) for Switzerland; Dustmann and Theodoropoulos (2006) for Britain; and Gang and Zimmerman (2000), Riphan (2002, 2003), and Fertig and Schmidt (2002) for Germany. Canada is often held up as an international success story in terms of the well-being of immigrants, yet to the best of our knowledge there are no Canadian-based studies of this sort. Soroka, Johnston and Banting (2007), and Reitz and Banerjee (2007) study aspects of intergenerational dynamics in Canada other than education, but the analysis we pursue using Canadian data is probably closest in spirit to Aydemir, Chen and Corak (forthcoming) who examine the intergenerational earnings mobility of immigrants to Canada.

We ask three questions that are relevant to the discussion concerning the well-being of the children of immigrants. First, what is the degree of intergenerational education mobility, and is it different among immigrants and their children? Second, what factors are most tightly related to the schooling outcomes of second-generation Canadians, parental earnings or parental education? And third, has the strength of the tie between the education of immigrant parents and their Canadian-born children changed over time?

The answers to these questions will help to shed light on the concern that the current economic situation of recent immigrants has strong implications for the next generation. The relative decline in the economic status of immigrants, particularly recent immigrants, has been well documented in Canada, as for example in Aydemir and Skuterud (2005), Baker and Benjamin (1994), Bloom, Grenier and Gunderson (1995), Frenette and Morissette (2003), Grant (1999), and Hou and Picot (2003). If money matters a great deal in determining the ultimate educational attainment of their children, it may also matter for their long-run economic well-being and the extent to which they can participate in the Canadian labour market.

2 A descriptive overview

Our analysis is based upon the 2001 Canadian Census, and on an associated post-censal survey conducted in 2002, the Ethnic Diversity Survey (EDS). The census analysis relies upon a new question referring to the birthplace of the respondent's parents. The so-called 'Long Form' of the census questionnaire, administered to 20% of the population, asks all persons aged 15 and over in which country their father and mother were born.[1] On this basis the 2001 Census allows the precise identification of immigrants, second-generation immigrants, and others born in Canada (which we refer to as third generation or higher). The EDS uses the Long-Form respondents as a sampling frame, over-sampling those with an ethnic origin that is non-Anglo-Saxon, permitting a more detailed analysis of Canadians by their ethnic and cultural background (Statistics Canada 2003). It also contains the same information on parental place of birth as the census, permitting an analysis of immigrants and second-generation immigrants, in addition to the general population.

As the 2001 Census marks the first time since 1971 that information on parental place of birth is available, we begin by offering a descriptive overview of the Canadian population that places second-generation immigrants and their educational attainment in a broader context. Tables 1 and 2 present information representative of the Canadian population using the full 20% file for both men and women categorized by parental origin. The population is classified into three broad groups: (1) Canadian born, by which we mean either those of Aboriginal ancestry or those who are third-generation or higher Canadians; (2) immigrants, those born in a country other than Canada; and (3) second-generation Canadian, those born in Canada whose parents were born elsewhere. Since there is some suggestion in the literature that long-run integration is related to language acquisition and age at migration, we divide the immigrant population into two groups, those arriving before the age of 12 and those who were 12 or older when they arrived. The former group is likely to have spent some part of their schooling in the Canadian elementary system and is more likely to have developed better language skills. Research has suggested that

---

1. This is Question 32, and the exact wording is as follows:

Remember, these questions are only for persons aged 15 and over.
PLACE OF BIRTH OF PARENTS

32 Where was **each of** this person's parents born?
Mark "×" or specify country according to present boundaries.

(a) Father | Born in Canada
Born outside Canada
Specify country
[ ]

(b) Mother | Born in Canada
Born outside Canada
Specify country
[ ]

Information of this kind last appeared in the Canadian census in 1971, when a much more restrictive question was posed, asking only if the respondent's parents were born in Canada, without identifying their country of birth.

these are important considerations in understanding the integration of immigrant children (Worswick 2004). This could also mean they may not differ in their adult outcomes from children who were actually born in Canada to immigrant parents, the second-generation group. For the descriptive purposes of these two tables, we categorize second-generation Canadians into three sub-groupings according to whether only the father is an immigrant, only the mother is, or both parents are.[2]

The weighted population shares suggest that in 2001 almost 65% of the Canadian population aged 16 to 65 were of Aboriginal origin or third generation, and in the neighbourhood of 20% were immigrants. The groups we are focusing on—those with both parents born outside of the country—represented 7.7% of the male population and about 7.3% of the female population. A broader definition of a second-generation immigrant, based on having only one parent born outside of Canada, would encompass just over 15% of the population, and close to 20% if those who immigrated to the country before the age of 12 were included. Immigrants and second-generation immigrants form, in other words, a sizable proportion of the Canadian population.

A focus on those with both parents born abroad places the attention upon a sub-category that is likely harder to integrate than those having one Canadian-born parent. Conditional on being between 16 and 65, this group is, on average, 35 years of age and tends to be slightly younger than their Canadian-born counterparts with both parents born in the country, who are about 39 years of age on average. Just over 50% are less than 35 years of age, compared with fewer than 40% for third-generation or higher Canadians.

At the same time, these second-generation Canadians also tend to have more education: those with both parents born elsewhere having on average about 14 years of schooling, one year more than third-generation Canadians. Around one third has at least 16 years of education, with over 20% of men and almost one quarter of women having at least an undergraduate university degree. About 22% of third-generation Canadians have this many years of education, while less than 15% have at least an undergraduate university degree. In fact almost 30% of third-generation men and about one quarter of third-generation women have less than 12 years of schooling, this proportion being significantly lower at 16% and 14%, respectively, for second-generation Canadian men and women.

These comparisons continue to favour second-generation Canadians, even when they are done within birth cohorts, as in Tables 3 and 4; every 10-year age cohort of second-generation Canadians with both parents born elsewhere has a higher proportion, with 16 or more years of education, than third- or more generation Canadians. This is particularly so for the younger cohorts. Over 44% of 25-to-34-year-old men with both parents born abroad have at least 16 years of education, compared with 30% of those with parents born in the country. Slightly over one half of second-generation women in this age group have at least this many years of schooling, compared with 35% of their third-generation counterparts and higher than any other birth cohort across both genders. While this group of women has considerably more education than their

2. We restrict the census data to non-institutional residents aged 16 to 65 years. Individuals who resided outside the 10 provinces and non-permanent residents are also excluded. Non-permanent residents refer to persons in Canada on student or employment visas, minister's permits, or refugee claimants.

male counterparts of the same age, for older cohorts—particularly the oldest—men tend to be more educated.

Our analysis is based essentially, but not entirely, upon this younger cohort. They are at once an old enough group for which we can reasonably begin to assume that the schooling process has been completed, yet young enough to permit an analysis across generations by using information on their parents in the 1981 Census.

3 Data and a framework for the analysis

The empirical approach is motivated by the regression to the mean model used in economic analysis to measure mobility in earnings, income, and other indicators of socioeconomic status across the generations as described, for example, in Corak (2004) and Mulligan (1997). This is depicted in Equation (1), where Y represents an outcome of interest, in our case years of education attained, and t is an index of generations.

$$Y_{i,t} = \alpha_t + \beta\, Y_{i,t-1} + \varepsilon_{i,t} \qquad (1)$$

To use the example of education, in this equation the educational attainment of family i's child would be $Y_{i,t}$, which is equal to the average years of education of generation t children, as represented by α_t, plus two factors determining the deviation from this average: a fraction of parental education ($\beta\, Y_{i,t-1}$) and other influences not associated with parental education ($\varepsilon_{i,t}$).

Average educational attainment will evolve through time, and it is very likely that many or all members of a generation will have more education than their parents. This is captured in Equation (1) by the value of α. However, and just as importantly, the equation reflects the idea that an individual's education is nonetheless related to his or her parents' education. This is captured by the value of β, which represents the fraction of education advantage that is, on average, transmitted across the generations. In other words, β summarizes in a single number the degree of intergenerational education mobility in a society. It could conceivably be any real number. A positive value would indicate intergenerational persistence of education in which higher parental education is associated with higher child education; a negative number would indicate intergenerational reversal in which higher parental education is associated with lower child education. In fact, the published research shows that this coefficient has always been found to be positive, though varying significantly across countries and with the level of development as, for example, in the analysis of over 30 countries by Hertz et al. (2007).[3]

3. Intergenerational mobility in education has, of course, been a longstanding concern in both economics and sociology. Some of the most related Canadian work in this area includes de Broucker and Lavallée (1998) using the International Adult Literacy Survey, Fournier, Butlin and Giles (1995) using the Survey of Labour and Income Dynamics, and Sen and Clemente (unpublished) using the General Social Survey. The last mentioned is closest in spirit to the methodology that we employ, but all of these studies find a strong positive association between parent and child education, though none focuses on immigrants. More recently attention has also shifted to the relationship between family background and actual literacy and numeracy outcomes for children, as opposed to formal schooling. See for example OECD and UNESCO (2003) based upon the Programme for International Student Assessment.

We implement this framework in two separate ways: indirectly, using a grouped estimator from the census; and directly, using reported individual information on parental education from the Ethnic Diversity Survey. We follow the U.S. analysis of Card, DiNardo and Estes (2000) and define second-generation immigrants to be those Canadian-born individuals whose mother and father were both born outside of Canada. First-generation immigrants are defined as those who immigrated to Canada regardless of the age of arrival. In beginning, it should be underscored that the 2001 Census does not permit a direct link between the adult outcomes of children and the status of their parents when they were raising their families, but it does permit the construction of a 'grouped' estimator relating the average outcomes of second-generation adults in 2001 with the average background characteristics of immigrant adults from the 1981 Census who were potentially their parents. An analysis of the intergenerational mobility of immigrants using detailed country of origin along these lines is also offered for the United States in Borjas (1993) and Card, DiNardo and Estes (2000), and also in the research on the intergenerational earnings mobility of the children of Canadian immigrants in Aydemir, Chen and Corak (forthcoming).

The analytical files from the census are constructed as follows. Immigrant fathers are drawn from the 1981 Census and restricted to those individuals whose spouse is also an immigrant, and who have Canadian-born children from the ages of 5 to 17 years. Using least squares regression we computed predicted values of $Y_{i,t-1}$ for each country of origin for individuals matching these criteria. Correspondingly, the second-generation sample consists of individuals from 25 to 37 years of age in 2001, whose parents were both immigrants. Similarly, predicted values of $Y_{i,t}$ are calculated for each country that respondents reported their fathers came from.

Since the variation in the outcome variables may arise from the differences in demographic characteristics among country groups, we construct age- and region-adjusted years of schooling and earnings outcomes for each country of origin. For the immigrant parents, we regress the variables of interest—years of education and also the logarithm of weekly earnings—on age, age-squared, country of origin dummies, dummies for the Canadian province of residence, and country of origin dummies interacted with age and age-squared. The inclusion of these interaction terms controls for differences in life-cycle profiles across countries. We then calculate predicted schooling or earnings for each source country at age 40 for those residing in Ontario, the most populous province.[4] For the second-generation sons and daughters, we construct age- and region-adjusted outcomes by regressing schooling on age, age-squared, dummies for father's country of origin, and region dummies, and then predict outcomes for each country group for a 31-year-old living in Ontario. These points in the life cycle correspond to those used in Aydemir, Chen and Corak (forthcoming) and also in much of the Canadian intergenerational earnings mobility literature, as well as roughly to the suggestion of Haider and Solon (2006), who examine life-cycle biases in the derivation of permanent income.

To avoid small sample-size problems, we aggregate some countries in which observations are less than 30 into groups and arrive at a total of 70 countries/regions. This is done separately for sons and daughters. These 70 data points are used to estimate Equation (1) for sons and daughters using years of education as the outcome, and weighted by population shares. As

4. The exclusion restrictions imposed on the underlying data differ slightly across the two variables of interest. For education, we use all available observations; for weekly earnings, we use only those observations in which respondents report positive earnings.

mentioned, we also calculate parental earnings in the same way, opening up the possibility of relating both parental education and earnings to the educational attainment of the children.

This grouped data estimator of Equation (1) has both advantages and disadvantages. These are discussed in Card, DiNardo and Estes (2000). The most obvious disadvantage includes the potential slippage between the generations. The 'parents' are the potential parents of the children, and there could be a slippage in how representative they are of the actual parents, due to death or emigration. At the same time, however, it should be noted that the large sample size available to us through the use of the full 20% census file reduces this problem to the largest extent possible in the literature with which we are familiar. In particular, this is a tighter fit than is possible with U.S. data. For example, Card, DiNardo and Estes (2000) are able to develop a similar structure for only 30 source countries, and the data require them to relate the earnings and education of all immigrants to all second-generation individuals aged from 16 to 65. Furthermore, as discussed in Aydemir and Borjas (unpublished), since the within-cell means are based upon calculations that are samples, their accuracy will vary with the number of observations available. The implication is that the sampling variation associated with the independent variable will cause an attenuation bias. Aydemir and Borjas (unpublished) examine the nature and extent of this bias, and also show that the use of the 20% census file, as opposed to smaller sampling rates available in public-use versions of the census, affords a sufficiently large sample size to minimize its impact.

On the other hand, the advantage of this estimator is that it is more robust to measurement error. This is a particularly important concern in the analysis of the intergenerational transmission of earnings inequality as discussed, for example, in Solon (1999, 1992). In this literature, researchers are faced with the difficulty of having to infer information on permanent income from annual earnings, and they are trying to minimize a classical errors-in-variables problem through instrumental variables or through multi-year averages from panel data on individual annual earnings. At first glance it might be reasonable to suppose that the measurement error problems in an outcome like education are not as severe as with earnings. Much of the literature implicitly and even explicitly assumes that in fact it is absent, but Ermisch and Francesconi (2004), using U.K. data on a commonly employed measure of socioeconomic status point out that this need not be the case.

All of this said, we use the census jointly with, and as a complement to, the Ethnic Diversity Survey (EDS), which has the advantage of offering individual-level information on educational attainment across two generations. This is a post-censual survey representative of the entire population, but with the objective of providing information on the ethnic and cultural background of Canadians. A sample of just under 42,500 people, 15 years of age and over, were interviewed in 2002 using the one-in-five 2001 Census data as the sampling frame, and basing the sample selection on the ethnic origin, place of birth and parental place of birth. Those who were not Canadian, British, French, American, Australian or New Zealanders in their response to ethnic origin questions were over-sampled (Statistics Canada 2003). The limitations of the EDS are that there is no information on earnings and income of parents, and the smaller sample size somewhat limits the degree to which specific countries of origin can be examined. It is in these ways that the census can be a useful complement. The advantages over the census are the retrospective information on parental education collected from survey respondents, and also the

capacity to estimate Equation (1) for both the children of immigrants, for the entire population of Canadians, and for different birth cohorts.

The EDS contains all the information from the 2001 Census for each survey respondent including, most importantly for our purposes, the years of education attained. The information on parental education attainment, however, is recorded as one of nine categories. In converting this information into years of schooling we rely on the fact that in addition to actual years of education the census also reports information categorically and actually in more detail with 16 categories being used. We re-code both the EDS categories and those in the 1981 Census into seven common categories.[5] We then match years of schooling from the census to the EDS by cells defined according to gender, country of origin, education category, and age (25 to 44 years, 45 to 54 years, and 55 and older). Within each of these cells we calculate from the 1981 Census the mode of the years of schooling and match this statistic to the individuals in the EDS in similarly defined cells according to the information they provided on their mothers and fathers.[6]

A summary of this information by broad region of origin is offered in Table 5 along with information from the census. The average years of education for second-generation men and women in panels 3 and 4 of the table are essentially the same across the two data sources, never differing by more than 0.3 to 0.4 of a year. This is not surprising, since the EDS information is extracted from the census, the differences likely reflecting sampling error. Second-generation Canadians, regardless of the region of the world in which their parents were born, all have more years of education than Canadians with parents also born in Canada. The advantage is greatest for those with African and Asian origins.

The information in panels 1 and 2 compares the direct measures of the years of schooling from the census with the data calculated from the categories reported in the EDS. The averages across these two sources are similar, with the possible exception of those from Africa, the census reporting an average of 14.9 years and our derivations from the EDS implying 16.1 years. But the EDS information is based upon a rather small sample of just 68 observations, so it is likely that this difference is due to sampling variation. The next largest difference is 0.7 years for those from Asia.

Further, the information as a whole suggests that all groups made gains over their parents. Canadians 25 to 37 years of age with Canadian-born parents have roughly two to three more years of education on average than their parents. Gains are also made by second-generation Canadians, though in some cases not as great in absolute levels because of the higher starting point of their parents. However, the gains are particularly high for those whose parents were born in Southern and Eastern Europe: on average, fathers had just less than nine years of schooling, but the children obtained 15 years. Those with parents born in Asia also obtained significantly more education than their parents, about two to three years more on average. A more refined

5. These are: (1) less than high school, including no schooling; (2) high school diploma; (3) some college without a diploma or certificate; (4) some university without a diploma or certificate; (5) college graduation with a diploma or certificate; (6) undergraduate university degree; and (7) graduate university degree.
6. We also calculated the cell medians and cell means. These all led to similar results, but the mode came closest to the census results in a comparison across broad regions of origin.

examination of this type of mobility, in the context of Equation (1), using both grouped data and individual data is discussed in the remainder of the paper.

4 Results

4.1 The degree and nature of intergenerational education mobility

Tables 6 and 7 offer results from the estimation of Equation (1), using both the grouped data estimator from the census, and individual level information from the Ethnic Diversity Survey (EDS) for men and women 25 to 37 years of age. This is done using father's years of education as the regressor in the first panel, mother's education in the second, and both at the same time as reported in the final panel of each of the tables. For men 25 to 37 years of age, every additional year of education their fathers have is associated with 0.13 years of more education. This estimate is virtually the same, regardless of whether the census estimate or the EDS estimate is relied upon. This suggests that the grouping estimator does not suffer from undo problems associated with the use of potential as opposed to actual fathers, and that there is likely little measurement error in this information. However, another interpretation is also possible. The grouped data estimator based on census data is a sum of the parental influence at the individual level, and the influence of the average level of education in the community. As such, the similarity in the results might be interpreted as suggesting that there is no influence of so-called 'social capital,' in the sense that Borjas (1992) uses that term. For women the point estimates are different at 0.10 and 0.16, but the standard error is 0.03, suggesting that the confidence intervals overlap. Further, all of these estimates appear to be about the same—within one standard error—if mother's education rather than father's is used as the right-hand side variable.

The second result from these tables is that at 0.13 and 0.16 the estimates are lower than those for third-generation Canadians of the same age cohort. The educational attainment of men and women whose parents were born in Canada is much more strongly tied to that of their fathers and their mothers than it is for second-generation Canadians. For every additional year of parental education the child's education is in the neighbourhood of 0.37 to 0.4 years higher, triple the estimate for Canadian-born children whose parents were immigrants. These results are also robust to using mother's education as the regressor. This contrasts with the finding in Aydemir, Chen and Corak (forthcoming), showing that the intergenerational elasticity of annual earnings, estimated to be about 0.2, is the same among second-generation Canadians as it is among the population as a whole.

Finally, the last panel of the table, by including both paternal and maternal years of education in the equation, makes explicit—when the focus is on the EDS—that for the second-generation sample the mother's and father's education have roughly the same association with the son's education. For every additional year of paternal education, the education of second-generation Canadian men is 0.08 years higher; and for every additional year of maternal education, it is 0.1 years higher; the standard error of these estimates being 0.05. Paternal education seems to be more important in the case of women, as there is no statistically significant association with

maternal education. The education of third-generation men is more tightly associated with paternal years of schooling, but there is no difference between parental effects for women.

However, the findings from the census are different than anything else observed. The coefficient on paternal education is much higher at 0.74 for sons and 0.58 for daughters, while that for maternal education is equally as great in magnitude but opposite in sign. In fact, there is near collinearity between the variables in these data. Using father's education as the regressand and mother's education as the regressor, least squares leads to a coefficient of 1.05 and an R-squared of 0.97. This likely suggests that the large change in the parameter estimates are a function of the high correlation in father's and mother's education at the community level. Further, the results at the individual level from the EDS do not show these patterns. There is no way in which we can improve on this by, for example, adding more observations. As it is, we are using a census and maximizing the number of groups that can reasonably be observed. Accordingly, we proceed by dropping one of the variables, mother's education, in our analysis since the results based upon the EDS offer the slight suggestion that paternal education is more often statistically significant.

Traditionally in the child development literature, maternal education is seen as the prime influence on child attainments, as for example in the discussion by Haveman and Wolfe (1994: 99–101). But recent research has brought this into some question because of the lack of controls for paternal education in many of these studies. If there is assortative mating so that the education levels of parents are similar, the use of only maternal education could be misleading (Behrman and Rosenzweig 2002). Indeed, Sen and Clemente (unpublished) offer an analysis of intergenerational educational attainments using the Canadian General Social Survey and obtain results similar to ours. Their results are for the entire population and are best compared with those reported in Tables 6 and 7 under the heading 'entire population.' They also find that the probability of postsecondary education is positively related to that of both parents, but somewhat more strongly to fathers.[7] These findings can also be used to motivate the focus in the remainder of our analysis on the relationship between child outcomes and paternal education.[8]

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7. The results they report in the second columns of their Tables 2 and 3 are not, however, directly comparable in magnitude with our findings because they deal with the probability of any postsecondary education or any university education rather than years of education. They are also not restricted to the age cohort upon which we focus. Their linear probability model of any postsecondary education leads to coefficients of 0.28 and 0.24 for indicators of whether the father attended postsecondary and whether the mother attended postsecondary. They also control for age, gender, marital status and province. The coefficients are estimated to be 0.27 and 0.18 when the probability of any university education is being examined. de Haan and Plug (2007, Table 2) also report a similar result from the Wisconsin Longitudinal Study.
8. We also used quantile regressions to amplify slightly the findings from the Ethnic Diversity Survey in order to highlight which part of the distribution contributes to the difference in the intergenerational covariance of years of education. The results were not strong and unambiguous. The least squares estimate of 0.134 for second-generation men is driven more by those sons at and below the median than those above, but that the estimate of 0.4 for third-generation men is driven by those in the top half of the distribution. That is, the link between parent and child education is stronger for high-achieving sons among the native population, but stronger for low-achieving sons for the second-generation population. But these tendencies were slight, and overall there were no really strong differences. The second-generation estimates are always much lower than those for the third generation throughout the entire distribution of child attainments. These general conclusions also held for women.

4.2 Parental education and earnings

Table 8 offers census-based least squares results examining the association of both paternal education and income with child education attainment. The results reported in the first column repeat, for the sake of reference, the results from the first columns of Tables 6 and 7, indicating the small positive association between father-child years of schooling. These coefficients are statistically significant at any marginal significance level, being three times as great as the standard error, and explaining about one fifth to one third of the total variance depending upon whether the focus is on men or women. This is in sharp contrast with the findings in Column 2, which are based on only the logarithm of paternal weekly earnings as the regressor. The coefficient is not statistically different from zero, neither for men nor for women, explaining none of the variation in the data. Finally, and not surprisingly, when both paternal years of education and earnings are used in the model education dominates, it actually turns out that earnings are negatively associated with the child's years of schooling—being on the margin of statistical significance at the 95% level—and the coefficient on education becomes larger in magnitude.

The suggestion in all of this is that, on average, paternal earnings on their own have no strong association with the education outcomes of children, either sons or daughters. There isn't a straightforward interpretation to give to these results. They are certainly not causal, but at the same time they don't simply reflect a near collinearity in the variables. The correlations between parental education and earnings are 0.6192 for fathers and 0.3244 for mothers. An unobserved effect may be at play. For example, it is possible that children of low-income parents have had more altruistic parents that have invested more heavily in non-monetary aspects of human capital than their higher earning counterparts. At the least, these patterns suggest that the education outcomes of second-generation children is much more closely correlated with the education of their parents, and relatedly to the institutional structure of an education system that does not appear to limit access according to income.

4.3 Changes in the intergenerational association of education

Tables 9 and 10 offer an expanded version of the EDS results presented in Tables 6 and 7 by fully interacting Equation (1) with birth cohort effects. The base case is the cohort 25 to 34 years of age, and separate intercepts and slopes are added for those 35 to 44 years, 45 to 64 years, and finally those 65 and older.[9] Three results follow from this exercise for both men and women.

First, for both the second-generation and the third-generation populations the slope coefficients seem to be the same across all birth cohorts. Rarely are the estimated coefficients for the interaction terms with paternal education greater than one standard error, and they are never greater than two standard errors. Individually these coefficients are not statistically significant from zero, and F-tests do not reject the null hypothesis that collectively they equal zero.

9. Our original inclination was to use 10-year age cohorts, but the group 55 to 64 represented about 7% of the samples, and we decided to aggregate it with 45 to 54 year olds after preliminary regressions revealed no statistically significant results.

Second, the estimates of the constant term make clear that second-generation Canadians obtain more years of schooling than those born in the country with Canadian-born parents. To be precise, for those 25 to 34 years of age the difference in years of schooling for men is four years in favour of second-generation Canadians; for women it is almost two and one-half years.[10]

Third, the separate intercepts for each birth cohort suggest that only in the case of the very oldest cohort, those older than 65 years in 2001, are the years of schooling different. This cohort obtained from two and three-quarters to four and two-thirds years fewer schooling than all younger cohorts. This could reasonably be attributed to changes in school leaving legislation as these individuals would have been 15 years of age at some point before 1950 (Oreopoulos 2006). It is the statistically significant result for this single cohort that drives the results of F-tests to a point that we cannot reasonably reject the null that all intercepts are collectively equal to zero.

With the possibility of this last exception, the results from this model show that for both men and women the intergenerational association in educational attainment, including overall average attainment, has been stable across all birth cohorts. None of the findings associated with Tables 6 and 7 need be modified: the Canadian-born sons of immigrants obtain about 0.10 years more schooling for every additional year their fathers have, and the daughters about the same at 0.16; this is significantly lower than the tie between the Canadian-born children of Canadian-born parents who obtain an additional 0.3 to 0.4 years of schooling for each additional year. In particular, the degree of intergenerational mobility among most recent second-generation Canadians is no stronger or no weaker than it has always been, and has not changed relative to third-generation Canadians.

It should be noted that the youngest second-generation cohort in our analysis, those 25 to 34 years of age in 2000, were born on average in 1970 and no earlier than 1966. In other words, this cohort was born just after the implementation of important policy changes that led to the removal of the national origin quota system as a means of selecting immigrants. Therefore, their parents likely entered the country before this system was replaced by a points-based policy geared to labour market integration. As such the extent to which these findings can be extrapolated into the future is an open question. The results may differ if the analysis were to be replicated in the future with more recent cohorts of immigrants and their children, those who were selected under the new policy regime, and who accordingly were much more diverse in their national origins.

5 Some refinements

These findings all pertain to averages, speaking to the overall patterns in the country. However, the large sample size of the census allows us to explore the variation in the data in more detail than possible with any other data source. Figures 1 and 2, for example, offer scatter plots of parent and child years of schooling used in the regression analysis presented in the first column of Tables 6 and 7. This illustrates the grouped information from each of the 70 countries making up our analytical file. A picture of this sort would be available from the Ethnic Diversity Survey but, because of the smaller sample size, for only about 30 countries. The weighted least squares

10. It should again be noted that these results pertain to the reference case of those living in Ontario.

regression line with slopes of 0.136 for father-son years of schooling, and 0.102 for father-daughter years of schooling are included in the figures, as are the average years of schooling for Canadian-born fathers and their Canadian-born children. These latter points are for illustrative purposes and are not used in the regression.[11]

The figures make clear that the children of immigrants are more educated than their counterparts with Canadian-born parents: the educational attainment of the latter lie below the level predicted by the regression line for the number of years of schooling their fathers had on average. While there is rapid regression to the mean among immigrant children—much more rapid than for the native Canadian population—it should be clear that this mean is an immigrant-based mean: the children of immigrants are regressing to a different, higher average than the children of Canadian-born parents.

The figures also make clear that in spite of the general tendencies there is a good deal of variation about the estimated regression lines. For the strong majority of countries, immigrant fathers have more than the average education of Canadian-born fathers, and this advantage is passed on to the next generation, both sons and daughters having more years of schooling than their Canadian-born cohort with Canadian-born parents. It is only the case in four countries that immigrant educational attainment is below the Canadian average and that this gap continues to be reflected in the next generation of sons and daughters. For all the other countries in which father's education is less than the average, the children make relative gains and exceed the Canadian average.

We use the information in these figures combined with similar information on weekly earnings in Aydemir, Chen and Corak (forthcoming) to highlight particular communities of concern. One could imagine that matters of integration into the broader community would be particularly salient under at least the following two circumstances. First, consider a situation in which fathers come to the country with greater than average schooling, yet earn less than the average. This might in part be the situation currently playing itself out because of the reported difficulties in having foreign education credentials recognized in the Canadian labour market. If these fathers then witness a similar scenario occurring for their children, it can reasonably be imagined that a sense of frustration or lack of belonging to the host country could develop both among them and among their adult sons and daughters. They may be willing to shoulder the costs of below average earnings in spite of having above average education, but to see that these costs do not lead to an improved situation for their children may change their perspective and that of their children. The second particularly pertinent scenario might be one of intergenerational transmission of lower earnings and education: fathers who come to the country with below average education and below average earnings see their children to grow up to also have lower

11. We examined the robustness of the regression estimates by successively dropping a single observation from the estimation and recalculating the slope before then re-including it in the estimation and dropping the next observation. There are no particularly influential observations in the data, the estimated slope not changing at all. The only exceptions to this—for both sons and daughters—were the estimates excluding the United Kingdom, Italy and Portugal. Without the United Kingdom, the slope for fathers-sons is just over 0.16, and similarly without Italy; while without Portugal it is 0.11. These are all within one standard error (0.038) of the original estimate of 0.136. The general patterns and conclusion also hold for the father-daughter analysis. Also, to be strictly correct, the averages depicted in the figures are for the reference case of someone living in Ontario.

education and earnings than the mainstream. This is a scenario in which social exclusion may be felt across generations.

In order to illustrate the relevance of these two possibilities we cross-classify the information in Figures 1 and 2 with similar information on parent-child weekly earnings. The results are offered in Tables 11 and 12, panels 1 looking at countries of origin in which fathers have on average more years of schooling than their Canadian counterparts, and panels 2 in which they have less. Focusing for the moment on Table 11, dealing with the father-son relationship, it is notable, firstly, that there are no cases of downward education mobility: if fathers have above average education, so do the sons. Second, in 57 of 70 countries the fathers have above average education, and in two thirds of these they also have below average earnings. But in 11 of these 38 cases the sons go on to earn less than the Canadian average, in spite of having above average education. So only a very small number of countries representing a small total population occupy this potentially challenging position. That said, these are dominated by the Caribbean countries and with the addition of West Africa likely represent a visible minority group highlighted by Reitz and Bannerjee (2007), and is the basis for their rather pessimistic perspective on the integration of second-generation immigrants.[12]

To address our second scenario, there are only 12 countries in which fathers have less than average years of schooling and less than average earnings, and in all but two of these cases the sons go on to have above average earnings, breaking out of this potentially challenging starting point. Some of these sons do this by having above average education (6 of 10), while others continue to have below average education in spite of having higher earnings. There are only two cases of an intergenerational transmission of disadvantage in earnings, though not of education: Cyprus and Greece, and neither of these countries have been highlighted by the existing literature as being particular flashpoints for discontent.

The situation for daughters, presented in Table 12, is in fact quite different than for sons. There is only one case of downward education mobility, Norway, and only one case in which fathers with above average education and below average earnings have daughters who grow up to also have above average education and below average earnings. For 37 of the 38 countries of origin with fathers in this situation the daughters go on to have both higher education and higher earnings than their Canadian counterparts. Furthermore, there are no examples of the intergenerational transmission of lower education and earnings. There are 13 countries of origins in which fathers on average have less education than the Canadian average, and in 12 of these they have below average earnings. But there is only one case in which the daughters find themselves with below average education and earnings.

12. The fact that Japan is also included in this group might be an anomaly. A closer look at the data shows that with respect to weekly earnings the data for both fathers and sons are essentially the same as the Canadian average, differing by less than 0.01 log points. Japan could just as easily be included as above the average, as below.

6 Conclusion

Our analysis of the degree and nature of intergenerational education mobility among the Canadian-born children of immigrants sheds light on three related issues within the scope of this topic. First, we find that the elasticity between parent and child years of schooling is rather loose among immigrants and their children, and indeed much looser than it is for the Canadian-born children of Canadian-born parents; second, that money has little to do with this intergenerational tie, indeed, if anything, lower earning immigrant parents have more educated children; and finally, that the strength of the tie between parent and child years of schooling has not changed across the birth cohorts of the post-war era. All of this also plays out in a context in which immigrants and their children have, on average, more years of schooling than Canadians who have been in the country for more than two generations. At the same time, it should be stressed that our analysis cannot and is not intended to uncover or outline the reasons for these patterns.

We also underscore the fact that our descriptive results are global, referring to societal averages, and offer an overall view with respect to the schooling of children and children of immigrants. Nevertheless, some interesting stories of a more detailed nature come out of the data. We highlight the fact that some children from some communities have higher than average education but lower than average earnings as adults, a pattern that echoes the situation faced by their parents. This applies to the sons of immigrants from a small number of countries, particularly the Caribbean and West Africa. This is similar to the major messages in Reitz and Banerjee (2007). Though these groups represent a small fraction of the total population it is important to also understand the nature of the intergenerational process underlying their outcomes, and this can likely be more fruitfully studied by detailed analyses specific to these communities.

Finally, it should be noted that by its very nature our analysis is historical, referring to cohorts of immigrants who arrived in the country some decades in the past, and whose children attended schools in the past. In spite of our examination of past cohorts of immigrants and their children and the suggestion that there is some continuity in the intergenerational process between the most recent and most distant cohorts of the post-war period, unclear is the extent to which the patterns we uncover, and the particular groups we highlight, can be extrapolated into the future.

Table 1
Characteristics of Canadian men, by birthplace and parental birthplace, 2001

	Canadian born		Immigrants		Second generation Canadian born		
	Aboriginals	Third generation or more	Age of migration 11 or younger	Age of migration 12 or older	Only father is immigrant	Only mother is immigrant	Both parents are immigrants
Number (unweighted)	128,918	1,159,886	72,544	304,794	84,983	61,683	143,115
Population share (%)	2.7	61.5	3.9	16.5	4.5	3.3	7.7
Average age (years)	35.2	38.8	35.7	44.1	39.7	39.3	34.9
Age (% distribution)							
16 to 24	26.0	18.9	25.8	7.3	21.5	20.7	26.1
25 to 34	24.8	19.1	22.8	16.2	18.3	18.7	26.8
35 to 44	24.1	25.7	21.5	26.3	19.3	20.0	25.8
45 to 54	15.8	22.3	22.1	26.2	19.8	25.1	11.0
55 to 65	9.3	14.0	7.8	24.0	21.1	15.7	10.3
Average years of schooling	11.2	13.0	14.0	13.9	13.6	13.7	14.1
Years of schooling (% distribution)							
Less than 12 years	52.7	28.4	19.0	21.5	22.4	21.0	16.5
12 years	22.4	22.3	19.6	14.5	22.9	23.0	20.2
13 to 15 years	17.4	27.3	29.8	25.3	27.3	28.1	30.8
16 or more years	7.5	22.0	31.6	38.6	27.4	27.9	32.6
Highest degree (% distribution)							
Less than high school	48.2	28.3	22.2	22.7	24.1	23.2	19.7
High school	27.5	31.2	31.3	24.3	30.9	30.8	31.8
Certificate	20.9	26.5	25.9	25.5	26.7	26.7	27.7
Undergraduate degree	2.9	11.1	16.3	18.4	14.2	15.1	17.2
Graduate degree	0.5	2.9	4.3	9.1	4.1	4.2	3.7

Notes: All calculations are based upon weighted data. Column percent distributions may not add to 100% because of rounding.
Source: Statistics Canada, 2001 Census.

Table 2
Characteristics of Canadian women, by birthplace and parental birthplace, 2001

	Canadian born		Immigrants		Second generation Canadian born		
	Aboriginals	Third generation or more	Age of migration 11 or younger	Age of migration 12 or older	Only father is immigrant	Only mother is immigrant	Both parents are immigrants
Number (unweighted)	132,076	1,187,527	70,789	331,788	89,656	62,344	140,682
Population share (%)	2.8	61.0	3.7	17.4	4.6	3.2	7.3
Average age (years)	35.4	39.2	36.0	43.7	40.2	39.6	35.1
Age (% distribution)							
16 to 24	24.9	17.9	24.4	6.8	19.9	19.9	25.4
25 to 34	25.3	19.3	22.7	18.2	18.4	18.9	26.9
35 to 44	24.7	26.1	22.5	26.5	19.5	20.0	25.9
45 to 54	15.9	22.5	22.6	25.8	20.4	25.1	11.1
55 to 65	9.2	14.3	7.8	22.6	21.9	16.2	10.8
Average years of schooling	11.6	13.2	13.8	13.2	13.6	13.7	14.3
Years of schooling (% distribution)							
Less than 12 years	46.3	24.3	18.1	24.4	19.9	18.7	13.4
12 years	22.3	23.1	21.4	16.3	24.4	24.7	20.5
13 to 15 years	22.0	30.7	31.1	28.7	30.2	30.4	32.7
16 or more years	9.4	22.0	29.0	30.6	25.7	26.2	33.3
Highest degree (% distribution)							
Less than high school	42.8	24.5	20.5	26.1	21.7	20.8	16.1
High school	28.0	31.4	32.5	26.5	30.8	30.8	31.2
Certificate	23.9	29.2	26.7	25.4	29.0	29.2	29.1
Undergraduate degree	4.8	12.6	17.0	16.8	15.4	15.9	20.4
Graduate degree	0.6	2.3	3.4	5.2	3.1	3.3	3.2

Notes: All calculations are based upon weighted data. Column percent distributions may not add to 100% because of rounding.
Source: Statistics Canada, 2001 Census.

Table 3
Percentage distribution of educational attainment, by age cohort, men 16 to 65 years of age in 2001

	Canadian born		Immigrants		Second generation Canadian born		
	Aboriginals	Third generation or more	11 years or younger upon arrival	12 years or older upon arrival	Only father is immigrant	Only mother is immigrant	Both parents are immigrants
				percent[1]			
Aged 16 to 24							
Less than 12 years	59.1	31.9	29.0	24.2	27.0	28.0	22.4
12 years	26.6	28.2	23.4	23.0	28.5	29.0	23.3
13 to 15 years	12.0	30.0	34.0	36.4	32.5	31.3	36.5
16 or more years	2.2	9.9	13.7	16.5	12.0	11.7	17.9
Aged 25 to 34							
Less than 12 years	43.2	16.6	9.3	13.9	10.6	8.8	7.9
12 years	25.7	21.9	16.9	14.3	20.2	21.7	17.1
13 to 15 years	21.5	31.3	29.3	26.7	30.7	31.1	30.8
16 or more years	9.6	30.1	44.6	45.2	38.5	38.4	44.2
Aged 35 to 44							
Less than 12 years	48.5	23.1	14.7	17.2	15.8	15.7	11.9
12 years	21.7	23.2	20.0	14.2	22.8	22.8	20.5
13 to 15 years	20.1	29.1	29.6	25.7	28.5	29.8	30.7
16 or more years	9.8	24.6	35.8	43.0	32.9	31.7	36.8
Aged 45 to 54							
Less than 12 years	53.1	28.7	18.4	20.3	19.5	19.8	15.3
12 years	18.1	21.1	18.4	13.7	22.8	22.1	20.2
13 to 15 years	19.1	25.8	28.4	24.9	25.8	26.7	28.1
16 or more years	9.8	24.3	34.9	41.1	31.9	31.4	36.5
Aged 55 to 65							
Less than 12 years	70.7	49.2	28.4	32.0	36.5	34.9	36.9
12 years	11.1	15.1	17.2	13.4	19.8	18.6	19.4
13 to 15 years	11.2	17.1	22.2	21.2	19.5	20.5	19.1
16 or more years	6.9	18.7	32.2	33.5	24.2	26.1	24.6
Aged 25 to 65							
Less than 12 years	50.5	27.6	15.6	21.3	21.1	19.1	14.4
12 years	20.9	20.9	18.3	13.9	21.4	21.5	19.1
13 to 15 years	19.2	26.7	28.3	24.5	25.9	27.3	28.8
16 or more years	9.4	24.8	37.8	40.4	31.6	32.1	37.8
Highest degree							
Less than high school	42.3	25.4	15.9	21.9	20.5	18.9	15.5
High school	27.6	29.2	26.8	22.5	27.2	27.5	26.3
Certificate	25.8	29.0	31.3	26.6	30.5	30.7	32.6
Undergraduate degree	3.6	12.9	20.2	19.3	16.7	17.7	20.6
Graduate degree	0.7	3.5	5.7	9.8	5.2	5.2	4.9
				years			
Average years of schooling	11.2	13.1	14.4	14.0	13.8	14.0	14.4

1. Column percent distribution within each cohort.
Notes: All calculations are based upon weighted data. Column percent distributions may not add to 100% because of rounding.
Source: Statistics Canada, 2001 Census.

Table 4
Percentage distribution of educational attainment, by age cohort, women 16 to 65 years of age in 2001

	Canadian born		Immigrants		Second generation Canadian born		
	Aboriginals	Third generation or more	11 years or younger upon arrival	12 years or older upon arrival	Only father is immigrant	Only mother is immigrant	Both parents are immigrants
				percent[1]			
Aged 16 to 24							
Less than 12 years	53.4	25.8	25.8	20.9	23.3	23.8	18.2
12 years	26.6	24.7	21.1	22.1	24.3	25.6	19.2
13 to 15 years	16.6	35.1	37.0	37.5	35.8	35.4	39.1
16 or more years	3.3	14.5	16.2	19.6	16.6	15.4	23.5
Aged 25 to 34							
Less than 12 years	36.6	11.8	7.1	14.4	7.3	7.4	4.8
12 years	23.4	19.3	14.9	14.8	18.0	17.7	14.0
13 to 15 years	27.3	33.7	30.5	29.7	31.7	31.4	31.1
16 or more years	12.7	35.2	47.5	41.1	43.0	43.6	50.1
Aged 35 to 44							
Less than 12 years	40.2	17.6	12.7	18.2	11.6	11.6	8.3
12 years	22.5	26.1	24.1	15.9	25.7	26.1	24.1
13 to 15 years	25.6	32.7	32.0	30.0	32.6	32.8	33.5
16 or more years	11.8	23.6	31.2	35.8	30.1	29.5	34.2
Aged 45 to 54							
Less than 12 years	47.0	26.2	20.2	25.2	17.4	17.9	13.0
12 years	19.3	24.9	26.8	16.5	27.8	28.3	25.8
13 to 15 years	21.8	28.5	27.6	28.7	28.8	28.7	30.1
16 or more years	11.8	20.5	25.4	29.7	25.9	25.1	31.2
Aged 55 to 65							
Less than 12 years	69.6	48.4	35.2	39.8	36.9	35.6	36.8
12 years	12.1	18.0	23.8	15.8	24.4	24.6	26.1
13 to 15 years	12.6	20.7	22.4	23.9	23.5	23.0	22.3
16 or more years	5.7	12.8	18.6	20.5	15.3	16.8	14.7
Aged 25 to 65							
Less than 12 years	44.0	24.0	15.6	24.6	19.0	17.4	11.8
12 years	20.9	22.8	22.1	15.8	24.1	24.5	21.0
13 to 15 years	23.8	29.7	29.2	28.1	29.0	29.2	30.5
16 or more years	11.4	23.6	33.1	31.5	28.0	28.9	36.7
Highest degree							
Less than high school	37.6	22.5	15.5	26.0	19.1	17.7	12.7
High school	27.1	29.6	28.9	25.0	27.7	27.8	26.6
Certificate	28.8	31.3	31.2	26.2	32.3	32.7	33.2
Undergraduate degree	5.8	14.0	20.1	17.3	17.1	17.9	23.4
Graduate degree	0.8	2.7	4.4	5.5	3.8	4.0	4.1
				years			
Average years of schooling	11.7	13.2	14.1	13.2	13.8	13.9	14.5

1. Column percent distribution within each cohort.
Notes: All calculations are based upon weighted data. Column percent distributions may not add to 100% because of rounding.
Source: Statistics Canada, 2001 Census.

Table 5
Mean years of schooling, by parent's region of origin for second-generation men and women 25 to 37 years of age, census and Ethnic Diversity Survey

	Census	Ethnic Diversity Survey
	years	
Fathers		
North America, Northern and Western Europe	13.9	13.8
Caribbean, Central and South America and Oceania	13.0	13.4
Southern and Eastern Europe	8.8	8.7
Africa	14.9	16.1
Asia	13.6	14.3
Canadian born	11.3	11.9
Mothers		
North America, Northern and Western Europe	12.9	12.8
Caribbean, Central and South America and Oceania	12.0	13.0
Southern and Eastern Europe	8.1	8.2
Africa	12.9	13.6
Asia	12.1	13.5
Canadian born	11.6	11.4
Second-generation men		
North America, Northern and Western Europe	14.8	14.5
Caribbean, Central and South America and Oceania	14.8	14.8
Southern and Eastern Europe	14.8	15.1
Africa	16.3	16.4
Asia	16.3	16.1
Canadian born, third generation or more	14.0	14.2
Second-generation women		
North America, Northern and Western Europe	15.2	15.1
Caribbean, Central and South America and Oceania	15.6	15.8
Southern and Eastern Europe	15.4	15.0
Africa	16.8	16.9
Asia	16.6	16.4
Canadian born, third generation or more	14.6	14.5

Note: For information from the Census, 'Fathers' and 'Mothers' in panels 1 and 2 refer to 'potential' fathers and mothers from the 1981 Census as described in the text, while from the Ethnic Diversity Survey the labels refer to retrospective information reported by the survey respondents with categorical information on parental education converted to years as described in the text. Second-generation men and women refer to those 25 to 37 years of age in 2001 with both parents born outside of Canada. The sample size from the 1981 Census for panels 1 and 2 is 80,651. For panels 3 and 4 the sample sizes are 45,415 and 41,927 for the second generation. The sample size from the Ethnic Diversity Survey used is 1,673 (789 men and 884 women).

Source: Statistics Canada, 1981 and 2001 Censuses, and 2002 Ethnic Diversity Survey.

Table 6
Least squares estimates of regression to the mean models of education mobility across the generations, men 25 to 37 years of age

	Census	Ethnic Diversity Survey		
	Second generation	Second generation	Entire population of 25 to 37 year olds	Third generation and higher
Father's education	0.136	0.134	0.329	0.400
	(0.038)	(0.031)	(0.023)	(0.031)
Constant	13.6	16.3	6.4	3.1
	(0.433)	(9.38)	(5.74)	(7.10)
Sample size	70	739	2,965	1,455
R-squared	0.30	0.111	0.145	0.170
Mother's education	0.122	0.162	0.309	0.381
	(0.030)	(0.036)	(0.028)	(0.038)
Constant	14.0	21.6	9.3	6.3
	(0.376)	(9.39)	(5.94)	(7.34)
Sample size	70	729	2,946	1,443
R-squared	0.220	0.106	0.095	0.115
Father's education	0.743	0.080	0.267	0.320
	(0.134)	(0.046)	(0.028)	(0.036)
Mother's education	-0.657	0.104	0.144	0.213
	(0.138)	(0.053)	(0.034)	(0.043)
Constant	13.3	20.0	3.1	-2.4
	(0.337)	(9.47)	(5.82)	(7.16)
Sample size	70	697	2,840	1,392
R-squared	0.490	0.121	0.160	0.196

Note: Standard errors are in parentheses.
Source: Statistics Canada, 1981 and 2001 Censuses, and 2002 Ethnic Diversity Survey.

Table 7
Least squares estimates of regression to the mean models of education mobility across the generations, women 25 to 37 years of age

	Census	Ethnic Diversity Survey		
	Second generation	Second generation	Entire population of 25 to 37 year olds	Third generation and higher
Father's education	0.102	0.163	0.292	0.370
	(0.031)	(0.033)	(0.021)	(0.029)
Constant	14.4	10.0	3.8	1.0
	(0.365)	(12.2)	(5.78)	(6.96)
Sample size	70	815	3,481	1,734
R-squared	0.22	0.078	0.128	0.162
Mother's education	0.092	0.128	0.298	0.403
	(0.030)	(0.036)	(0.026)	(0.034)
Constant	14.7	6.2	3.5	2.7
	(0.316)	(12.3)	(5.83)	(7.02)
Sample size	70	824	3,553	1,768
R-squared	0.16	0.043	0.109	0.154
Father's education	0.580	0.160	0.206	0.249
	(0.121)	(0.045)	(0.024)	(0.032)
Mother's education	-0.516	0.0098	0.167	0.252
	(0.127)	(0.048)	(0.029)	(0.036)
Constant	14.1	9.3	2.5	-0.116
	(0.287)	(12.7)	(5.66)	(6.81)
Sample size	70	786	3,372	1,683
R-squared	0.38	0.079	0.150	0.206

Note: Standard errors are in parentheses.
Source: Statistics Canada, 1981 and 2001 Censuses, 2002 Ethnic Diversity Survey.

Table 8
Least squares estimates of regression to the mean models of education mobility across the generations, parental education and income, for men and women 25 to 37 years of age

	(1)	(2)	(3)
Men 25 to 37 years of age			
Father's education	0.136		0.198
	(0.038)		(0.054)
Father's *ln* earnings		0.465	-2.09
		(0.980)	(1.06)
Constant	13.6	12.1	27.1
	(0.433)	(6.70)	(6.72)
Sample size	70	70	70
R-squared	0.30	0.01	0.40
Women 25 to 37 years of age			
Father's education	0.102		0.153
	(0.031)		(0.047)
Father's *ln* earnings		0.284	-1.69
		(0.815)	(0.935)
Constant	14.4	13.7	25.2
	(0.365)	(5.57)	(5.94)
Sample size	70	70	70
R-squared	0.22	0.00	0.31

Note: Standard errors are in parentheses.
Source: Statistics Canada, 1981 and 2001 Censuses, 2002 Ethnic Diversity Survey.

Table 9
Least squares estimates of regression to the mean models of education mobility across the generations, fully interacted model with birth cohorts, men 25 to 37 years of age

	Second generation	Entire population	Third generation and higher
Father's education	0.104	0.307	0.371
	(0.034)	(0.0255)	(0.0349)
Father's education × 35 to 44 years of age	0.077	-0.0198	-0.0286
	(0.053)	(0.0362)	(0.0489)
Father's education × 45 to 64 years of age	0.052	0.0556	0.0253
	(0.082)	(0.0419)	(0.0531)
Father's education × 65 years of age	0.106	0.0699	0.0609
	(0.099)	(0.0642)	(0.0914)
Constant	14.2	11.2	10.2
	(0.45)	(0.339)	(0.454)
35 to 44 years of age	-0.944	0.081	0.231
	(0.637)	(0.441)	(0.584)
45 to 64 years of age	-1.06	-1.05	-0.653
	(0.875)	(0.469)	(0.594)
65 or more years of age	-3.73	-2.95	-2.76
	(0.964)	(0.656)	(0.908)
Sample size	1,770	9,180	4,755
R-squared	(0.197)	(0.187)	(0.198)
F-test for slope interactions = 0	0.92 (0.430)	1.48 (0.218)	0.54 (0.653)
F-test for intercept interactions = 0	5.03 (0.002)	9.30 (0.00)	4.30 (0.005)
F-test for all interactions = 0	14.7 (0.00)	24.37 (0.00)	12.1 (0.00)

Note: Standard errors are in parentheses.
Source: Statistics Canada, 1981 and 2001 Censuses, 2002 Ethnic Diversity Survey.

Table 10
Least squares estimates of regression to the mean models of education mobility across the generations, fully interacted model with birth cohorts, women 25 to 37 years of age

	Second generation	Entire population	Third generation and higher
Father's education	0.157	0.246	0.311
	(0.036)	(0.024)	(0.032)
Father's education × 35 to 44 years of age	0.0067	0.060	0.0250
	(0.055)	(0.037)	(0.049)
Father's education × 45 to 64 years of age	-0.0067	0.0509	0.0173
	(0.076)	(0.035)	(0.044)
Father's education × 65 years of age	0.130	0.106	0.0847
	(0.072)	(0.055)	(0.085)
Constant	13.8	12.3	11.4
	(0.46)	(0.32)	(0.43)
35 to 44 years of age	-0.626	-1.34	-0.909
	(0.62)	(0.43)	(0.57)
45 to 64 years of age	-0.727	-1.82	1.35
	(0.81)	(0.41)	(0.52)
65 or more years of age	-4.67	-4.12	-3.92
	(0.76)	(0.54)	(0.79)
Sample size	1,952	10,892	5,703
R-squared	0.258	0.231	0.238
F-test for slope interactions = 0	1.74 (0.156)	1.76 (0.153)	0.36 (0.784)
F-test for intercept interactions = 0	13.9 (0.00)	20.0 (0.00)	8.50 (0.00)
F-test for all interactions = 0	32.1 (0.00)	65.0 (0.00)	36.8 (0.00)

Note: Standard errors are in parentheses.
Source: Statistics Canada, 1981 and 2001 Censuses, 2002 Ethnic Diversity Survey.

Table 11

Countries and regions of father's birthplace categorized by father's status and son's outcomes for second-generation Canadians relative to the average outcome of Canadians and third-generation Canadians, 70 countries from the census

	Son's education greater than Canadian average				Son's education less than Canadian average	
	Earnings less than average	Earnings greater than average			Earnings less than average	Earnings greater than average
Father's education greater than Canadian average						
a. Earnings less than Canadian average	Barbados	Argentina	Other North Africa	Spain/Other		
	Columbia	Brazil/Chile	Other South America	South Europe		
	Oceania	Hong Kong	Other West Asia	Sri Lanka		
	Grenada	India	Other Western Europe	Switzerland		
	Guyana	Iran/Iraq	Pakistan/Nepal	Syria		
	Haiti	Israel	Philippines	Taiwan		
	Jamaica	Kenya	Poland	Tanzania		
	Japan	Korea	Romania	Turkey		
	St. Lucia	Morocco	Russia	Uganda		
	Trinidad	Netherlands				
	West Africa					
b. Earnings greater than Canadian average	Other	Australia	Germany	New Zealand		
	Caribbean	Austria	Hungary	Norway		
	Other European	Czech/Bulgaria	Indonesia	South Africa		
	Community					
	Africa	Denmark	Ireland	Sweden		
	United States	Egypt	Malaysia and Singapore	United		
		France		Kingdom		
Father's education less than Canadian average						
a. Earnings less than Canadian average	Cyprus	China	Lebanon	Other East Asia		Ecuador
	Greece	Italy	Malta	Yugoslavia		Other Central America
						Paraguay
						Portugal
b. Earnings greater than Canadian average	Finland					

Source: Statistics Canada, 1981 and 2001 Censuses.

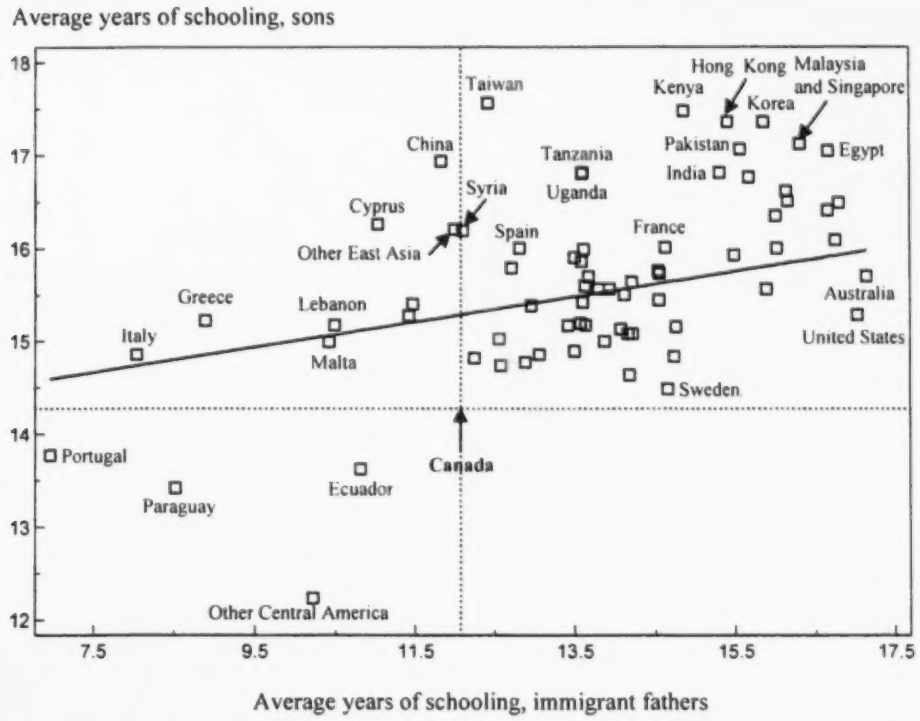
Table 12

Countries and regions of father's birthplace categorized by father's status and daughter's outcomes for second-generation Canadians relative to the average outcome of Canadians and third-generation Canadians, 70 countries from the census

	Daughter's education greater than Canadian average				Daughter's education less than Canadian average	
	Earnings less than average	Earnings greater than average			Earnings less than average	Earnings greater than average
Father's education greater than Canadian average						
a. Earnings less than Canadian average	Other South America	Argentina Barbados Brazil/Chile Colombia Grenada Guyana Haiti Hong Kong India Iran/Iraq Israel Jamaica Japan	Kenya Korea Morocco Netherlands Oceania Other North Africa Other West Asia Other Western Europe Pakistan/Nepal Philippines Poland Romania Russia	St. Lucia Spain/other Southern Europe Sri Lanka Switzerland Syria Taiwan Tanzania Trinidad Turkey Uganda West Africa		
b. Earnings greater than Canadian average		Australia Austria Czech/Bulgaria Denmark Egypt France Germany	Hungary Indonesia Ireland Malaysia and Singapore New Zealand Other Caribbean	Africa South Africa Sweden United Kingdom United States Other European Community	Norway	
Father's education less than Canadian average						
a. Earnings less than Canadian average		China Cyprus	Ecuador Greece Italy	Lebanon Malta Yugoslavia	Other Central America	Other East Asia Paraguay Portugal
b. Earnings greater than Canadian average		Finland				

Source: Statistics Canada, 1981 and 2001 Censuses.

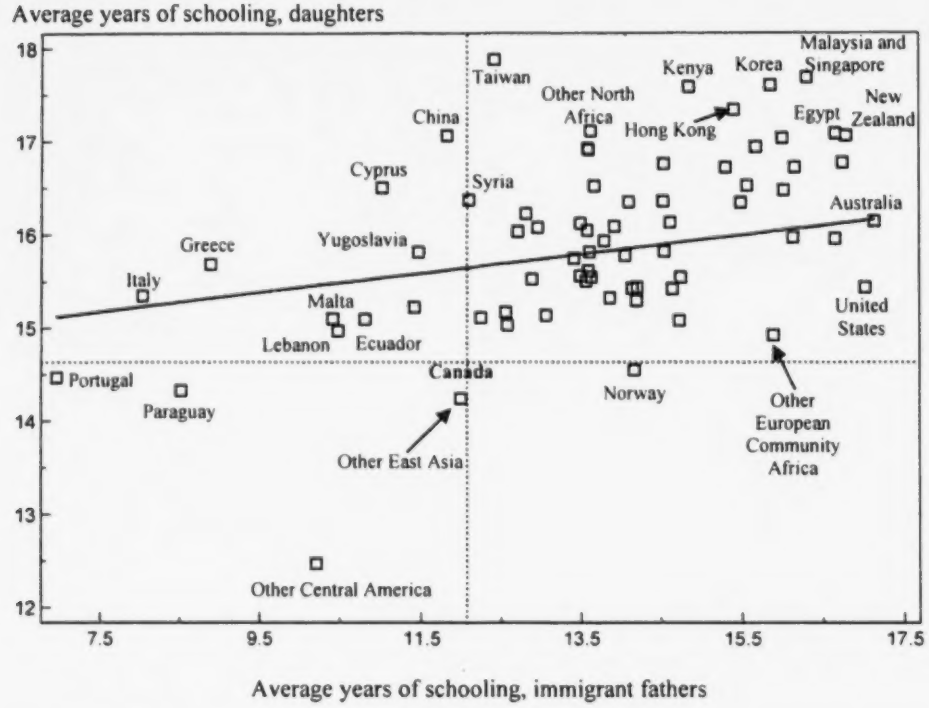
Figure 1
Scatter plot of grouped data of years of schooling for immigrant fathers and second generation sons, census data for 25-to-37-year-old Canadian-born children of immigrants



Note: The dashed vertical and horizontal lines are the average years of schooling for Canadian born fathers and their Canadian born sons, 12.1 and 14.3 years respectively. These data are not used in the regression analysis between father and son years of education, the results of this weighted least squares regression being represented by the solid line with slope of 0.136.

Source: Statistics Canada, 1981 and 2001 Censuses.

Figure 2
Scatter plot of grouped data of years of schooling for immigrant fathers and second generation daughters, census data for 25-to-37-year-old Canadian-born children of immigrants



Note: The dashed vertical and horizontal lines are the average years of schooling for Canadian born fathers and their Canadian born daughters, 12.1 and 14.6 years respectively. These data are not used in the regression analysis between father and daughter years of education, the results of this weighted least squares regression being represented by the solid line with slope of 0.102.

Source: Statistics Canada, 1981 and 2001 Censuses.

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